

INDICATING COATINGS

Patent number: GB1313058
Publication date: 1973-04-11
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Applicant: BATTELLE DEVELOPMENT CORP
Classification:
 - international: G08B13/10; G01N19/08; G01N27/20
 - european: G01N27/20B
Application number: GB19710021363 19710419
Priority number(s): US19700011418 19700216

Also published as:

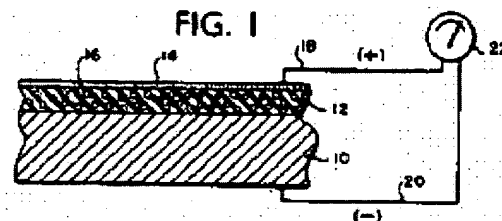


FR2078877 (A5)
 DE2106986 (A1)

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Abstract of GB1313058

1313058 Detecting cracks BATTELLE DEVELOPMENT CORP 19 April 1971 [16 Feb 1970] 21363/71 Heading G1S [Also in Division G4] The occurrence of cracks in a member 10 are detected by providing an indicating liquid, which may be pigmented and/or electrically conducting, in a plurality of reservoirs 16 in coatings 12, 14 on the member. In Fig.1, a metal member 10 has a non-conductive layer 12 containing the reservoirs 16 and a conducting layer 14. Cracks forming in member 10 propagate into layer 12 through some of the reservoirs and the cracks become filled with indicating liquid. The cracks may then be detected electrically as a fall in resistance of layer 12 and/or usually by virtue of pigments in the indicating liquid. The reservoirs may consist of capillary channels, Fig. 4 (not shown), or indentation, Fig. 5 (not shown), in the surface of layer 12. The reservoirs may alternatively be formed in the conducting layer 14, Fig. 6 (not shown), and layer 12 may then be omitted if a visual only indication is required. The conducting layer may be conductive by virtue of a high density of reservoirs, the walls of the reservoirs being made of metal or other conductive material, Fig.7 (not shown). Where the member 10 is not conductive, a conductive layer may be interposed between the member 10 and the layer 12 to allow electrical indication to occur, Fig. 8 (not shown). Suitable substances for the various layers and the indicating liquid are disclosed. The examples describe fatigue tests of specimens in which the resistance of layer 12 falls during the tests. The layer 12 may be provided in the form of a partially cured tape or patch, or in the form of an emulsion which cures in situ. The indicating liquid may be solid at ambient temperature.



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